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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,453	02/09/2001	Christopher C. Tanner	1930.0070002	6696

26111 7590 10/19/2004

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EXAMINER

YIGDALL, MICHAEL J

ART UNIT PAPER NUMBER

2122

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/779,453

Applicant(s)

TANNER ET AL.

Examiner

Michael J. Yigdall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment and reply filed July 12, 2004 has been fully considered. Claims 1-19 are now pending.

Response to Arguments

2. Applicant's arguments have been fully considered but they are not persuasive.
3. In response to Applicant's arguments that there is no suggestion to combine the references (see Applicant's remarks, the last paragraph on page 8, the fourth paragraph on page 10, and the first, second and last paragraphs on page 11) the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

It is believed that a suggestion or motivation to combine the references was presented for each of the above cases in the previous Office action.

Peercy discloses a system to support the development of graphics-based content in a platform-independent manner (see the abstract and FIG. 1). Likewise, Pavan discloses a system to support the development of real-time, multimedia-based applications (see the abstract). The features of Pavan used to supplement Peercy's system would favorably (a) enable low-level operations to be encapsulated and thus hidden (see Pavan, column 4, lines 9-18), (b) enable the

application to be automatically targeted for a distributed environment (see Pavan, column 2, lines 47-49), and (c) simplify the programming (see Pavan, column 7, lines 37-49).

The features disclosed by Barbour are used to optimize the performance of an application that is developed in a platform-independent manner and then implemented for a specific platform (see column 1, lines 55-65 and column 2, lines 53-61). One of ordinary skill in the art would have been motivated to provide such optimization in both the system of Percy and the system of Percy in view of Pavan to optimize performance.

Similarly, Jones discloses features for managing the resources of a real-time application, features that are further adaptable for use in a distributed environment (see column 4, lines 57-67). Such resource management features would thus enhance the support for real-time applications in distributed environments, such as in the system of Percy in view of Pavan or in the system of Percy in view of Pavan in view of Barbour.

4. In response to Applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning (see Applicant's remarks, page 11, second paragraph), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the Applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

5. Applicant contends that the tree used in Percy is not an application graph stored for traversal during run-time (see Applicant's remarks, page 9, first paragraph), and that Pavan does

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not teach or suggest storing processing blocks that define content and storing an application graph that expresses the identity of the stored processing blocks and data connectivity between the stored processing blocks (second paragraph).

However, the tree disclosed by Peercy (see FIG. 3) is an application graph *per se* that expressly represents a graphics computation (see column 4, lines 14-16). The tree is processed (see step 210 in FIG. 2) and the computation is executed (see step 214 in FIG. 2), which is to say that the tree is traversed at run-time.

Furthermore, Pavan clearly discloses storing processing blocks that define content (see column 4, lines 28-37, especially “an example application constructed with a block-based programming model,” and column 4, lines 9-18, especially “a block is a high level encapsulation of a specific function inside a computer program”).

Pavan also discloses storing the processing blocks in the form of a block diagram, or in other words, in the form of a graph (see user program 400 in FIG. 4). The processing blocks in this form certainly represent the data connectivity between the blocks (see column 5, lines 8-14, especially “the program blocks are interconnected through one or more ports” and “each port is characterized by a data type [and] a data flow direction,” as well as column 6, lines 18-26, especially “specifying connections between output ports and input ports on program blocks”).

Peercy further teaches a graphical application platform for executing programs (see the abstract, especially “high-speed execution of graphics application programs”).

Therefore, in combination, Peercy and Pavan disclose storing an application graph that expresses the identity of the stored processing blocks and data connectivity between the stored

processing blocks, whereby the application graph can be traversed by a graphical application platform at run-time to execute appropriate processing blocks on a run-time platform.

6. Applicant further contends that neither Peercy nor Pavan teach or suggest connections between blocks that implement data flow between blocks, particularly “such that capabilities of the game application and any of the multiple hardware platforms can be implemented modularly” (see Applicant’s remarks, page 9, last paragraph) and similarly “whereby capabilities of at least one of the application software and the hardware platform can be implemented modularly” (page 10, first paragraph).

However, Pavan teaches connections between the blocks that implement data flow between the blocks, as presented above. The blocks implement the functions or the capabilities of the application (see column 4, lines 28-37), and do so modularly (see column 4, lines 19-26, especially “primitive blocks usually encapsulate a single and simple function” and “composite blocks are collections of primitive blocks to provide higher order functions”). Pavan further discloses blocks that implement capabilities of the hardware platform (see column 6, lines 45-63, especially “additional services provided by intermediate blocks include resource reservation, ... synchronization, resource scheduling, and inter-node communication”).

7. Applicant asserts that Jones does not teach or suggest a graphical application platform with an application real-time kernel including logic that invokes blocks according to a schedule as recited in claim 9 (see Applicant’s remarks, page 10, fourth paragraph).

However, as above, Peercy discloses a graphical application platform for executing programs (see the abstract). Pavan provides an application real-time kernel that invokes blocks

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according to a schedule (see the abstract and column 2, lines 3-14, which shows implementing real-time applications that have multiple inputs and outputs that must be synchronized within specified time constraints).

Jones supplements the system of Peercy in view of Pavan by providing the additional features recited in claim 9, such as thread-based scheduling (see column 6, lines 9-26), execution monitoring for purposes of dynamic loading and unloading (see column 14, lines 41-48, especially “resources are granted” and “resources may be reassigned”), thread management (see column 18, lines 18-39), memory sharing (see column 5, lines 16-28), mutual exclusion and synchronization (see column 25, lines 41-47).

8. Applicant asserts that neither Peercy nor Barbour, taken alone or in combination, teach or suggest a method of pre-processing a graphics application with respect to a pre-defined hardware platform as recited in independent claim 14 (see Applicant’s remarks, page 11, last paragraph).

However, Peercy discloses pre-processing a graphics application with respect to a predefined hardware platform (see the abstract, and FIG. 1, which illustrates platform-dependent targeting of a graphics application at step 140). The additional limitations of claim 14 were fully addressed in the previous Office action.

9. With regard to the rejection of claims 1-15 in the previous Office action as being unpatentable over Applicant’s own admitted prior art, although the claims include features not expressly anticipated by the admitted prior art, it is not apparent from the claims that the features of Applicant’s invention recited in the claims solve the deficiencies of or patentably distinguish over the prior art systems described in the specification. Clarification is respectfully requested.

Specification

10. The objection to the abstract of the disclosure set forth in the previous Office action is withdrawn in view of the amendment.

Drawings

11. The objection to the drawings set forth in the previous Office action is withdrawn in view of the replacement drawing sheets.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-8, 10, 11 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,578,197 to Peercy et al. (art of record; herein "Peercy") in view of U.S. Pat. No. 6,502,238 to Pavan et al. (art of record; herein "Pavan").

With respect to claims 1-4, 6-8, 10 and 11 (original), the grounds of rejection set forth in the previous Office action are maintained.

With respect to claim 5 (currently amended), the grounds of rejection set forth in the previous Office action are maintained. The additional limitations recited in the claim are

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analogous to those of claim 8. See the grounds of rejection applied to claim 8 as set forth in the previous Office action.

With respect to claims 16-19 (new), the limitations recited in the claim are analogous to those of claims 1-4, respectively. See the grounds of rejection applied to claims 1-4 as set forth in the previous Office action.

14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Percy in view of Pavan, as applied to claim 8, and further in view of U.S. Pat. No. 6,584,489 to Jones et al. (art of record; herein "Jones").

With respect to claim 9 (original), the grounds of rejection set forth in the previous Office action are maintained.

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Percy in view of Pavan, as applied to claim 8, and further in view of U.S. Pat. No. 5,857,106 to Barbour et al. (art of record; herein "Barbour").

With respect to claim 12 (original), the grounds of rejection set forth in the previous Office action are maintained.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Percy in view of Pavan in view of Barbour, as applied to claim 12, and further in view of Jones.

With respect to claim 13 (original), the grounds of rejection set forth in the previous Office action are maintained.

17. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peercy in view of Barbour.

With respect to claims 14 and 15 (original), the grounds of rejection set forth in the previous Office action are maintained.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (703) 305-0352. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

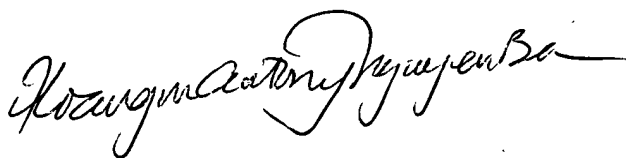
After October 25, 2004, the examiner can be reached at (571) 272-3707, and the examiner's supervisor, Tuan Q. Dam can be reached at (571) 272-3695.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MY

Michael J. Yigdall
Examiner
Art Unit 2122

mjy



ANTHONY NGUYEN-BA
PRIMARY EXAMINER